

REMARKS

Applicant presents independent claim 7 as amended with associated dependent claims 8-21 and 23-26 and independent claim 28 as amended with associated dependent claim 29.

The amendments to the independent claims clarify a feature that appeared in original claim 22 and was incorporated into claims 7 and 28 in the previously filed Response. Original claim 22 recited that "the in-feed includes a web guide feeding the pulp to a point directly in front of the beating zone".

Claim 7 as amended recites in part that a refining zone is situated directly in front of and separate from the web guide and receives the in-fed pulp web as separated from the web guide, between two beating surfaces defined by confronting rolls.

Claim 28 as amended recites in part that a refining zone for receiving the in-fed pulp web, has two beating surfaces defined by confronting rolls that directly contact and impose compressive and shear forces on the pulp web to refine the pulp, wherein the in-feed feeds and releases the pulp web to a point directly in front of the refining zone.

It is clear from the figures, such as Figures 1 and 2, that only the pulp web enters the beating (refining) zone. The combination of original claims 1 and 22 thus recited, in part, feeding the pulp to a point directly in front of the beating zone. That the web guide and/or feeder itself does not enter the beating (refining) zone was thus previously presented and the present clarification should not raise any new issues regarding further substantive consideration or search.

In Figure 1 and the associated description beginning at the bottom of page 9, only item 6, the preformed pulp web, is entering and leaving the beating zone between the rolls. This would represent a previously formed web, such as from a high consistency preforming, that is fed to the beating zone. As described in the last paragraph on page 8, at higher consistencies the web can run without support (i.e., without a web guide).

In Figure 2, the belts (8, 9) both guide and then feed the web in front of and separate from the rolls. The web is released so that the web enters the beating (refining) zone separated from the guide and feeder functions. In this embodiment, the

unrefined pulp is carried on the belts to a point directly upstream of the beating gap, where it is fed between the rolls (see page 10 first full paragraph). As disclosed on page 8, sixth paragraph, when used with low consistence pulp, the pulp enters the beating zone on a separate web-forming guide mechanism that extends to a point immediately upstream of the beating zone.

All pending claims were rejected under either 35 USC 102 as anticipated or 35 USC 103 as obvious in view of numerous citations. Applicant submits that all of the claims are allowable over the cited references, taken alone or in combination.

The feature highlighted by the present amendment is not anticipated by the newly cited references of Vesa, Hurst, Sutherland, Ramo and Clark, where in some cases no web guide is present or in other cases the web guide transports the web through the treatment zone. Collins discloses in Fig. 2a web guide, which ends before the treatment zone, but it does not disclose a pulp web between two beating surfaces defined by confronting rolls.

In particular, Vesa et al (U.S. 4,843,685) does not disclose a pulp web in-feed including a web guide, which feeds directly the pulp web into the refining zone. In Vesa the conveyor wire (29) is located after the rolls to transfer the fiber material web to further treatment. Furthermore Vesa does not disclose a compressive beating refiner; it discloses a device for the production of a nonwoven fabric by forming a fiber web having fibers oriented evenly in all directions.

Collins et al. (US 5,475,903) discloses a method for making a composite nonwoven fabric. The rolls (14, 14a, 15, 15a) are for drafting the cross-lapped web. By adjusting the degree of drafting the orientation of the fibers may be controlled thus determining the strength characteristics of the resulting fabrics. The function of these rolls is for drafting a web and not for beating a pulp web to improve the bonding properties of the fibers. Collin does not disclose a refining zone, which is receiving the in-feed pulp web between two beating surfaces by confronting rolls.

Hurst (US 2,509,147) discloses an apparatus for and a method of conditioning textile fibers. The function of the rolls is to break up foreign substances in textile fibers for the removal thereof. The extender rolls in Hurst are provided with teeth and grooves arranged and adapted for a rolling and sliding action. Hurst does neither disclose a pulp

web nor a beating refiner and it also does not disclose a web guide, which feeds the pulp web into a refiner zone.

Sutherland (US 3,454,970) discloses an apparatus and process for washing a pulp web with squeeze rolls for squeezing out the pulp web and with compression rolls, to compress the web in such a way that it undergoes a rapid expansion which takes place in a brief period as the pulp is leaving the nip of the rolls. Thus these rolls only have a dewatering and compression function but no beating function. The web guide transports the pulp web through the washing area and does not end before. Therefore this dewatering and washing unit has nothing to do with applicant's claimed invention.

Ramo (US 3,310,244) discloses a load cell for crushing rolls. These rolls are press rolls to crush the undesirable elements existing in a carded web of textile fibers. Ramo does neither disclose a pulp web nor a beating refiner and it also does not disclose a web guide, which feeds the pulp web into a refiner zone.

Clark (US 2,890,493) discloses a method and means for defibering materials. It discloses more particularly the separation of a fibrous mass of fibers into substantially individual fibrous elements and the dispersion of these separated fibers in substantially dry form into an air stream. The Clark device is a separation apparatus for dry fiber materials and not a beating device, which improves the bonding properties of the fibers. Furthermore, Clark does not disclose a web guide which feeds the pulp web to a point directly in front of the beating device and which ends before the beating device. Clark also does not disclose a pulp web outlet.

The devices disclosed in the citations are designed for completely different tasks; therefore it is not obvious to modify such a device for beating of a pulp web.

For the foregoing reasons, applicant requests allowance of all claims as amended.

Respectfully submitted,

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